5 - Assembling Electronics

If you have never assembled electronics you should read about the basics before you begin. The steps below outline the basic procedures for preparing, soldering and inspecting many kinds of electronic components. With a few tools and a little patience you will have no trouble assembling, testing and using your kit.

F5.1 - Basic tools needed:
Soldering iron, small sponge, electronic solder, needle nose pliers, side cutters. Optional: Spare soldering iron tip, solder wick, flux remover.
Plug in the iron, and moisten the sponge with water. When the iron is hot, "tin" the tip with a small amount of solder. (Replace the tip if it is corroded).
Wipe the tip across the damp sponge frequently to keep it clean. A clean, well-tinned tip does best. Spoil yourself.

F5.2 - Bend the component leads to fit the holes on the board.

F5.3 - Insert the component, observing any special orientation it may require. Bend the leads enough to hold the part flush against the board, but do not overbend.

F5.4 - Wipe the tip clean and tin it with a small amount of solder.

F5.5 - Heat the joint by placing the soldering iron's tip against both the component lead and the circuit board pad.

F5.6 - After a moment of heating, touch the solder to the lead & pad only. (If touched to the iron it will blob up.) When the solder flows, remove it and hold the tip in place for one second. Remove the iron without moving the part and let the joint cool.

F5.7 - Trim excess component lead with the side cutter. Parts with short leads do not need to be trimmed. Inspect the joint. A good solder joint blends the lead and pad smoothly together and has a smooth, bright finish.